



Genesis Solar Electric Project  
11995 Wiley Wells Rd  
Blythe, CA 92225

August 4, 2012

Mr. Eric Veerkamp  
Compliance Project Manager  
California Energy Commission (CEC)  
1516 Ninth Street  
Sacramento, CA 95814

**RE: Genesis Solar Energy Project (09-AFC-8)  
Condition of Certification BIO-07 and 17  
American Badger and Desert Kit Fox Monitoring and Management Plan**

Dear Mr. Veerkamp:

Per the Conditions of Certification, Bio-07 and Bio-17, please find the attached American Badger and Desert Kit Fox Monitoring and Management Plan for your review and approval. Also included is a CD for your electronic records.

If you have any questions or concerns, please contact me at 951-634-2395.

Sincerely,



---

Jennie Gavaldon  
Construction Compliance Manager  
Genesis Solar Energy Project  
[Jennifer.Gavaldon@NextEraEnergy.com](mailto:Jennifer.Gavaldon@NextEraEnergy.com)  
951-634-2395

cc: File copy



Genesis Solar Electric Project  
11995 Wiley Wells Rd  
Blythe, CA 92225

August 4, 2012

Magdalena Rodriguez  
CDFG  
Inland Deserts Region  
3602 Inland Empire Blvd  
Suite C220  
Ontario, CA 91764

Tera Baird  
U.S. Fish and Wildlife Service  
777 E. Tahquitz Canyon Way  
Suite 208  
Palm Springs, CA 92262

Mark Massar  
Palm Springs/South Coast Field Office  
1201 Bird Center Drive  
Palm Springs, CA 92262

**RE:      Genesis Solar Energy Project (09-AFC-8)  
            Condition of Certification BIO-07 and 17  
            American Badger and Kit Fox Monitoring and Management Plan**

Dear Sir/Madam:

Per the California Energy Commission's Conditions of Certification Bio-07 and Bio-17, please find the attached copy of the American Badger and Kit Fox Monitoring and Management Plan for Genesis Solar Energy project. Also included, is a CD for your electronic records.

If you have any questions or concerns, please contact me at 951-634-2395.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jennie Gavaldon", written over a horizontal line.

Jennie Gavaldon  
Construction Compliance Manager  
Genesis Solar Energy Project  
[Jennifer.Gavaldon@NextEraEnergy.com](mailto:Jennifer.Gavaldon@NextEraEnergy.com)  
951-634-2395

cc:      Eric Veerkamp  
            CEC

File

**AMERICAN BADGER AND DESERT KIT FOX  
MONITORING AND MANAGEMENT PLAN  
for  
THE GENESIS SOLAR ENERGY PROJECT**

**DRAFT**

*Prepared for:*  
Genesis Solar, LLC  
11995 Wiley Wells Road  
Blythe, California 92226

*Prepared by:*  
AECOM  
1420 Kettner Blvd. #500  
San Diego, California 92101  
Phone: (619) 233-1454

August 2012

DRAFT

## Table of Contents

|            |   |          |
|------------|---|----------|
| <b>1.0</b> | <b>INTRODUCTION .....</b>                                 | <b>1</b> |
| 1.1        | Purpose of the Plan .....                                 | 1        |
| 1.2        | Project Location and Description.....                     | 2        |
| 1.3        | Early Desert Kit Fox Den Complex Occurrences .....        | 2        |
| 1.4        | Recent Canine Distemper Virus.....                        | 2        |
| <b>3.0</b> | <b>SURVEY, MONITORING, AND RELOCATION METHODS.....</b>    | <b>3</b> |
| 3.1        | Pre-Construction Survey.....                              | 3        |
| 3.2        | Den Complex Monitoring .....                              | 4        |
| 3.3        | Passive Relocation and Burrow Excavation .....            | 5        |
| 3.4        | Plant Site Exclusion.....                                 | 6        |
| <b>4.0</b> | <b>DISPOSITION OF SICK, INJURED, OR DEAD ANIMALS.....</b> | <b>7</b> |
| 4.1        | Injured Animals.....                                      | 7        |
| 4.2        | Sick Animals.....   | 7        |
| 4.3        | Fatalities.....   | 7        |
| <b>5.0</b> | <b>GENERAL BEST MANAGEMENT PRACTICES.....</b>             | <b>8</b> |
| <b>6.0</b> | <b>REPORTING .....</b>                                    | <b>8</b> |

### APPENDIX

- A Genesis Solar Energy Project (09-AFC-8C), Riverside County, California Condition of Certification BIO-17, Desert Kit Fox and American Badger, California Energy Commission, November 2011.
- B Canine Distemper Virus: Information for Agency Personnel and Renewable Energy Projects, California Department of Fish and Game, November 2011.
- C Interim Monitoring and Mitigation Plan to Address Canine Distemper Virus Mortalities in the Desert, California Department of Fish and Game.

This page intentionally left blank.

## 1.0 INTRODUCTION

### 1.1 Purpose of the Plan

This American Badger and Desert Kit Fox Monitoring and Management Plan (Plan) describes the actions to be taken to protect resident and/or transient desert kit fox (DKF) (*Vulpes velox*) and American badger (AB) (*Taxidea taxus*) known to occur or that may occur within and in the vicinity of the Genesis Solar Energy Project (GSEP or Project). This Plan specifies a monitoring and passive relocation approach that, when implemented, will facilitate avoidance and minimization of impacts to DKF and AB that are relocated from the Project disturbance area.

The primary purpose of this Plan is to provide strategies to avoid direct impacts to DKF and AB as a result of construction, operation, and decommissioning of the GSEP. The Plan provides strategies to facilitate the protection of DKF, a California protected furbearing species, and AB, a California Species of Special Concern. This Plan fulfills the Project avoidance and minimization measures identified in Condition of Certification (COC) BIO-17 in the GSEP Final Decision, as amended, in the August 8, 2012 California Energy Commission (CEC) Amendment for the GSEP (Appendix A). As such, the Plan addresses pre-construction surveys; classification of dens; excavation of inactive den complexes in the construction area to prevent reuse; monitoring of potentially or definitely active den complexes; use of passive techniques to exclude DKF/AB from those complexes; and protocols for handling sick, injured, or dead DKF and AB. This Plan incorporates several adaptive measures recommended by the California Department of Fish and Game (CDFG) to enhance avoidance and minimize impacts to DKF and AB.

The following specific objectives for DKF/AB protection are addressed in this Plan:

1. Pre-construction den surveys for new construction activities, as follows:
  - Establishing the locations of and classifying DKF/AB-occupied and DKF/AB-suitable burrows within 100 feet of all Project facilities, utility corridors, and access roads.
  - Monitoring DKF/AB at den complexes occupied or known to be visited by DKF/AB within the Project disturbance area and Buffer (100 feet).
  - Defining passive hazing techniques to relocate DKF or AB occupying or visiting identified DKF/AB burrows.
  - Establishing acceptable protocols for handling sick, injured, or dead DKF or AB.
  - Identifying appropriate best management practices (BMPs) for continued protection of DKF and AB during all phases of the Project.
2. Protocols for dealing with injured, sick, or dead DKF and AB, as follows:
  - Notification process (who, when, and how) if an injured, sick, or dead DKF/AB is found in any area associated with the GSEP (plant site, access road, generation tie-line [gen-tie line]).
  - Protocols for trapping and transporting injured or sick DKF/AB if found in any area associated with the Project.
  - Protocols for dealing with a DKF or AB that is killed as a result of Project construction, operation, or decommissioning.

3. BMPs to ensure continued protection of DKF and AB during construction, operation, and decommissioning.

## 1.2 Project Location and Description

The Project site is located in Riverside County, California, between the community of Desert Center and the city of Blythe. The Project is located on land owned by the federal government and managed by the Bureau of Land Management (BLM), pursuant to a right-of-way grant issued to Genesis Solar from BLM and the power plant certification issued by CEC. The total Project disturbance area (at build-out) will be approximately 1,819.5 acres.

The Project is a concentrated solar electric-generating facility that will use parabolic trough technology to generate electricity. The Project consists of two independent concentrated solar electric-generating facilities with a nominal net electrical output of 125 megawatts (MW) each (Units 1 and 2), for a total net electrical output of 250 MW. The plant site includes the solar arrays, power blocks, power-generating equipment, support facilities, and evaporation ponds. The linear facilities include a transmission line, distribution line, natural gas pipeline, and a main access road. These areas together make up the Project Area.

## 1.3 Early Desert Kit Fox Den Complex Occurrences

Prior to development of this Plan, DKF burrow complexes were detected during biological resources surveys conducted for the Project's Application for Certification (AFC), pre-construction surveys conducted prior to initial Project disturbance, and during ongoing biological compliance monitoring for the construction phase of the Project. DKF have been and continue to be active throughout the Project Area. To date, 31 DKF den complexes have been detected within the plant site and along the access road or within the Buffer.<sup>1</sup> Twenty-two of these DKF den complexes have been collapsed per guidelines stipulated in BIO-17 (prior to the August 2012 amendment) and in coordination with the CEC Compliance Project Manager (CPM), CDFG, and BLM. Six dens are considered inactive, but have not been collapsed, as they are located outside of the Project disturbance area. At present, seven DKF den complexes are being monitored, of which only one is located within a 100-foot buffer of the Project disturbance area.

## 1.4 Recent Canine Distemper Virus

CDFG confirmed the presence of the Canine Distemper Virus (CDV) in DKF populations near Blythe, California, and in surrounding portions of the Chuckwalla Valley in October 2011 (Appendix B). CDV is transmitted by contact with body fluids containing the virus, and can be transmitted by and affect any member of the canine family, not just DKF. The virus is killed by direct sunlight, heat, drying, and cleaning with a 10% bleach solution.

As of June 18, 2012, there were 17 DKF mortalities within or in the vicinity of the Project Area; nine of these were inside the temporary desert tortoise (*Gopherus agassizii*, DT) exclusion fence and eight were outside of the fence. Five of the eight outside of the fence were near the access road. Of the 12 DKF remains submitted to CDFG for necropsy, nine were confirmed to have died from CDV. There is no determination of the source or a direct cause and effect correlation; however, the confirmation of CDV in DKF identified the need for additional measures to minimize the potential for spread of the disease. Supplemental measures, such as foot sterilization during den monitoring, have been incorporated into standard practices at the site associated with DKF monitoring, and BMPs are included in the methodologies summarized in this Plan.

---

<sup>1</sup> DKF den complexes are tracked and identified in the Monthly Compliance Report.



## 2.0 ROLES AND RESPONSIBILITIES

GSEP has a Designated Biologist (DB) assigned to the Project. This DB is approved by the CEC CPM in consultation with CDFG, the U.S. Fish and Wildlife Service (USFWS), and BLM. The GSEP DB is responsible for ensuring compliance with the measures that are summarized in the COCs and for implementation of this Plan. For site-specific issues pertaining to DKF and AB, the DB will keep the Genesis Environmental Compliance Manager (ECM) and construction team apprised of the situation to ensure DKF/AB protection. Information regarding DKF or AB surveys and monitoring will be reported in the Monthly Compliance Report (MCR) unless otherwise noted in this Plan. Any issues that are critical will be directly communicated by the DB to the CEC, CDFG, and BLM via email/phone conversation; a copy of the email will be sent to the Genesis ECM and construction management team. All phone conversations will be documented via email to the Genesis ECM and construction management team.

Multiple Biological Monitors (BMs) have also been approved for the Project to assist with implementation of the COCs and biological surveys and monitoring. BMs are required to be familiar with this Plan and will assist the DB with its implementation. BMs have reporting authority to the DB.

The GSEP also has an on-site ECM. The Genesis ECM must be familiar with this Plan and is responsible for supporting the DB and BMs with implementation of this Plan. The Genesis ECM will also assist the DB and BMs in educating the construction management team and contractors about DKF and AB issues.

## 3.0 SURVEY, MONITORING, AND RELOCATION METHODS

This section discusses the specific procedures and methods to be used to achieve the purposes and objectives of this Plan, including pre-construction detection surveys, den complex monitoring, passive relocation protocols, and plant site exclusion.

### 3.1 Pre-Construction Survey

Per BIO-17, pre-construction surveys for DKF/AB will be conducted concurrently with DT surveys within the Buffer of all Project facilities, utility corridors, and access roads. Dens will be classified as inactive, potentially active, or definitely active. These surveys will be directed by the DB and staffed by qualified BMs. Specific requirements of this protocol stipulate that walking survey transects will be spaced to allow 100% visual coverage of the ground surface; that the distance between transect center lines will be no more than 20 meters; and that transect size will be reduced to account for differences in terrain, vegetation density, and ground surface visibility. Pre-construction surveys for DKF/AB will be conducted by walking through suitable habitat over the Project disturbance area and in areas in the buffer of the Project disturbance area. This Buffer is included to account for adjacent den complexes and foraging habitat outside of the Project disturbance area that may be affected by factors such as noise and vibration due to heavy equipment which may impact resources outside the Project Disturbance Area, as discussed in BIO-8.

After initial pre-construction surveys are conducted, a DT exclusion fence will be installed around the plant site and all plant facilities. The DT exclusion fence may not exclude DKF or AB from the Project disturbance area. Where vegetation is left intact in these areas, both DKF and AB may create new dens complexes. If permanent exclusionary/security fencing is not installed within 3 weeks of clearance surveys, supplemental surveys may be required to verify that no new dens are created prior to ground disturbance. Supplemental surveys will be conducted by walking transects within areas with intact vegetation using the protocol described above. Surveys may also be necessary within the Buffer to verify that no new DKT/AB are present (which would require establishment of non-disturbance buffers).

The results of each pre-construction survey will be included in the MCR submitted to the CPM and CDFG for the duration of construction. This information will also be included in the Annual Compliance Report.

The pre-construction survey serves two purposes:

1. Identifies locations where construction exclusion buffers and passive monitoring equipment will be installed. Den complex monitoring is discussed in Section 3.2.
2. Identifies all den complexes from which DKF/AB will need to be passively relocated or excluded. Passive relocation of DKF/AB is discussed in Section 3.3.

### 3.2 Den Complex Monitoring

All DKF/AB den complexes in the Project disturbance area identified as potentially active or definitely active will be monitored for 3 consecutive nights using a tracking medium (e.g., diatomaceous earth or fire clay) and infrared camera stations at the entrance. Using both methods can help to ascertain whether or not DKF or AB in photos are actively using den sites or are just visiting other dens within their range. If, after 3 nights, no AB/DKF tracks are found at the burrow entrance, or no photos of the target species using the den are observed, the den can be excavated and backfilled by hand, as discussed in Section 3.3. The tracking medium will not be used to monitor dens outside of the Project disturbance area. Monitoring dens outside of the Project disturbance area and within the buffer, when required, will be accomplished with wildlife cameras only.

Because of the known outbreak of CDV around the Project area, during den complex monitoring, the shoes of all BMs visiting the monitoring equipment will be disinfected every day and between visits to each den complex to prevent the spread of CDV. The preferred method for disinfecting work boots is to spray the soles of shoes with bleach solution (or equivalent disinfectant) prior to moving to another burrow site, and preferably waiting 10 minutes before wiping/rinsing off with water.

To maximize the likelihood of species detection and to avoid the spread of CDV between den complexes that will be directly impacted by construction activities, tracking media will be deployed and maintained using accepted methods. At the start of monitoring at a den complex to be excavated, tracking media will be spread with a disinfected sifter around all burrows associated with the complex. The sifter will be disinfected by showering it with a spray bottle of 10% bleach solution prior to and after each use of the sifter. The sifter will be allowed to dry to prevent clumping in the tracking media. During subsequent monitoring visits to a den complex (after tracking information is collected), the same sifting procedures will be used to prepare all burrows for the next monitoring period to prevent reidentification of tracks or other activity from prior visits. If sifting becomes a problem due to weather conditions (i.e., wind), an alternate method may be employed with agency approval.

When setting up a wildlife camera at an active or potentially active DKF/AB den complex, the following steps are preferred, although other methods may also be employed, based on site conditions:

1. Locate the camera sufficiently away from the burrow or complex where the field of view captures all of the burrows. Ensure that the stakes driven into the soil will support the weight of the stakes and camera. If it is not possible to capture the entire field of view with one camera, use additional cameras as available.
2. Drive two stakes into the ground at approximately a 60 degree angle, crossing each other in an "X" pattern. The stakes will provide a support structure with a plane perpendicular to the center of the camera's field of view. To ensure maximum capture of the ground area, it may be necessary to install the "X" tilted slightly down toward the burrow or complex.
3. Attach the camera to the "X" support tightly with a bungee cord, looping the cord in and out of the camera handles for maximum support.

4. Check the camera positioning to ensure that all areas to be monitored are in the approximate field of view. If the area to be photographed is very specific, it may be necessary to take test images by walking through the field of view. Confirm that the field of view is appropriate on a laptop or other viewer.
5. Turn the camera on. Check that there is sufficient power remaining in the batteries and sufficient space remaining on the memory media for the camera to operate until the next visit. After putting down the tracking medium (where necessary), arm the motion capture mechanism and leave the area.

To check the photos, approach the camera from behind, turn the camera off, and remove and replace the memory media. Turn the camera back on prior to departing if further surveys are required. Plug the memory card media into a card reader, attach the reader to a laptop or other viewer, and view the images on the card.

If DKF/AB tracks or photos are observed during these initial 3 nights, CDFG has requested that such den complexes be further classified as active non-natal or natal (pups are present) den complexes. The denning season is March through August for AB and February through June for DKF. Potential natal den complexes are to be monitored for a minimum of 3 additional days using infrared wildlife cameras and/or tracking medium to determine their status. If the den complex is determined to be natal during the denning period (spring/summer), a 300- to 500-foot non-disturbance buffer zone will be established surrounding natal dens, and monitoring by infrared cameras or weekly visits by the DB or BM will continue until it has been determined that the young have dispersed. The final buffer distance will be determined in consultation with the CPM, BLM, and CDFG. If the den complex within the Project disturbance area is determined to be non-natal, passive hazing techniques will be used to discourage DKF/AB from using the den complex, as discussed in Section 3.3, below. If an active non-natal den is detected outside of the Project disturbance area (i.e., in the survey buffer), a 100-foot non-disturbance buffer will be established. The final non-disturbance buffer distance and/or activity limitations will be determined in consultation with the CPM, BLM, and CDFG.

CDFG has indicated that DKF may not be trapped. However, there are circumstances under which CDFG has implemented trapping programs for biological research, including a trapping and monitoring program implemented in the vicinity of the GSEP for study of the CDV outbreak. In situations where CDFG has radio-collared DKF, the DB and/or BM may assist CDFG with monitoring efforts, including radio telemetry tracking. In these situations, telemetry data will also be recorded and reported to CDFG. When available, telemetry data will be used to assist in determining den use.

In the wake of the CDV diagnosis in the area, the Applicant has agreed to support CDFG with monitoring known active DKF den complexes within and adjacent to the GSEP (within 1 kilometer) (Appendix C). In addition, all mortalities and observations of sick/injured animals will be reported immediately to CDFG, and all known den complex locations will be mapped and provided to CDFG. Den complex monitoring information associated with CDV tracking efforts will be provided weekly to CDFG. The disinfection protocol outlined in Appendix C will be employed during DKF monitoring activities. If CDFG determines that the CDV outbreak is contained and/or terminates its monitoring program, monitoring of DKF beyond the 100-foot buffer area required for the Project may cease. The monitoring associated with CDV is considered a separate effort from the Project's DKF monitoring and management actions, and does not alter the survey or monitoring buffers, or requirements associated with Project activities.

### **3.3 Passive Relocation and Burrow Excavation**

DKF and AB must be excluded from all den complexes within the plant site portion of the Project disturbance area. Inactive dens that are within the Project Area, and will be impacted by construction, will immediately be excavated by hand and backfilled to prevent reuse by DKF/AB. If tracks or DKF/AB are captured in camera photos, then various passive hazing techniques will be implemented to deter DKF and AB from using the den complex. If DKF/AB are present and passive relocation techniques fail,

CDFG will be contacted to explore other relocation options such as trapping, in consultation with the CPM and BLM.

When a den complex is determined to be non-natal, the preferred method for passively relocating or excluding DKF or AB from the den complex is described below. Additional methods may be employed, as appropriate, for the specific situation.

1. Install one-way doors in all suitably sized burrows in the den complex. One-way doors will be installed in burrows actively used by DKF/AB after installation occurs on all other suitable burrows to avoid multiple evictions.
2. Install one-way doors during the afternoon and while the DKF/AB are inactive and deep within the den complex. If any DKF/AB leave the den complex in response to one-way door installation, door installation will cease until after the DKF/AB have voluntarily left the vicinity of the den complex.
3. After one-way doors are installed, monitor the den complex with tracking medium, infrared camera stations, and/or telemetry equipment (where applicable) for 3 days to determine whether DKF/AB have left the den complex.
4. On the third day following one-way door installation, using a fiber-optic scope camera, all burrows will be inspected to ensure that DKF/AB no longer occupy the den complex.
5. Upon confirmation that the den complex is unoccupied, excavate the burrows using hand tools. This excavation will start at the opening of the least used burrow in the den complex and will continue until excavation reaches the den chamber. Six-inch-diameter flexible, corrugated drainage pipe will be held at the opening of the burrow being excavated to allow DKF/AB to escape. All other burrows in the den complex, least to most used (as observed by wildlife cameras), will be excavated using the same procedure. When all burrows in the den complex are excavated, all burrow sidewalls will be collapsed into the excavated burrows and the entire den complex will be refilled with the excavated material to prevent reoccupation by DKF/AB. All excavated soils will be sanitized by exposing the material to sunlight.
6. Periodically visit the den complex after the passive relocation effort is complete until ground disturbance commences in the immediate area to ensure that DKF/AB do not reexcavate burrows and reoccupy the den complex.

The results of the passive relocation effort will be included in the MCR submitted to the CPM and CDFG for the duration of construction. This information will also be included in the Annual Compliance Report.

### **3.4 Plant Site Exclusion**

The permanent DT exclusion fencing will consist of a 6-foot-high security fence that includes a DT exclusion mesh installed 18-inches-high and buried to a depth of 12 inches. This fence will help deter DKF and AB from entering the Project site. Permanent site security fencing will be installed as early in the site development process as possible, and ideally just after completion of clearance surveys. If the permanent fencing is not installed, or is not sufficient to exclude DKF or AB (e.g., minimum 6-foot-tall chain-link fencing with DT exclusionary fencing attached), additional measures may be required to exclude DKF/AB from the site.

Even with security and exclusionary fencing in place, there is the possibility that DKF or AB could still cross the fence into the Project site. Because both DKF and AB have deep burrows, it is possible that these species could burrow under the fence. The fence lines should be checked for tracks and/or digs during fence monitoring activities to assist in assessing fence crossing activity (i.e., ingress/egress by DKF or AB). Per BIO-9, the DT exclusion fencing must be inspected at least once a month and within 24 hours following major rainfall events. Any potential DKF or AB burrows that may extend below the DT

exclusion fencing could be detected during fence inspections. If DKF/AB are found on-site during construction, construction will stop until the animal leaves active construction areas.

## 4.0 DISPOSITION OF SICK, INJURED, OR DEAD ANIMALS

The CPM and CDFG will be notified if injured, sick, or dead DKF or AB are found. If an injured, sick, or dead animal is detected on any area associated with the GSEP or linear facilities, the DB or BM will immediately notify the Genesis ECM, the CPM, and the Ontario CDFG office by phone. Written follow-up notification via fax or electronic communication will be submitted to the CPM, BLM, and CDFG within 24 hours of the incident. Additional actions are summarized below based on type of incident.

### 4.1 Injured Animals

If a DKF or AB is injured because of any Project-related activities, the DB or BM will notify the Genesis ECM and contact CDFG personnel for immediate capture and transport of the animal to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. CDFG, in consultation with the CPM and BLM, will determine the final disposition of the injured animal, if it recovers. Written notification of the incident will contain, at a minimum, the date, time, location, and circumstances of the incident.

### 4.2 Sick Animals

If a DKF or AB is found sick and incapacitated on any area associated with the GSEP site or linear facilities, the DB or BM will notify the Genesis ECM and contact CDFG personnel for immediate capture and transport of the animal to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. CDFG, in consultation with the CPM and BLM, will determine the final disposition of the sick animal, if it recovers. If the animal dies, a necropsy will be performed by a CDFG-approved facility to determine the cause of death. The Project owner will pay to have the animal transported and a necropsy performed. Results will be provided to the Project owner by CDFG. Written notification of the incident will contain, at a minimum, the date, time, location, and circumstances of the incident.

### 4.3 Fatalities

If a DKF or AB is killed because of any Project-related activities during construction, operation, or decommission, or is found dead on the Project site or along associated linear facilities, the DB or BM will collect and immediately refrigerate the carcass (dry ice will not be used) and notify the CPM and CDFG personnel within 24 hours of the discovery to receive further instructions on the handling of the animal. If the animal is suspected of dying of unknown causes, a necropsy will be performed by a CDFG-approved facility to determine the cause of death. The Project owner will pay to have the animal transported and a necropsy performed. A *Department of Fish and Game – Wildlife Investigations Laboratory, Desert Kit Fox Mortality Data Sheet* will be included with all dead DKF sent to CDFG, including photographs before the site is disturbed and a Global Positioning System (GPS) location of the DKF. A construction Wildlife Incident Form will also be completed and submitted to the CPM, BLM, and CDFG within 24 hours of observation.

The purpose of the necropsy effort associated with DKF, or other canines, is to determine the cause of death or illness in order to track the progression of CDV in the DKF population. If the number of cases increases or the geographic area spreads, management options to reduce potentially significant impacts to DKF may be necessary.

In addition to the general protocols identified above, dead or sick DKF or coyote remains will be handled as specified in Appendix C.

## 5.0 GENERAL BEST MANAGEMENT PRACTICES

In addition to the specific DKF and AB measures and protocols defined above, the GSEP will implement general BMPs to avoid and minimize impacts to these species. The BMPs summarized below will be verified by the DB and BMs during site monitoring activities.

1. The DB or BMs will verify that accessible pipes within the Project disturbance area that could be used by DKF are capped and/or covered every evening or when not in use to prevent DKF or other wildlife from using pipes and structures.
2. Wildlife crossing signs will be installed along permanent access roads to remind drivers of the potential to encounter DKF or other wildlife.
3. Speed limits will be reduced at night on roadways to reduce traffic impacts to wildlife. Due to the dynamic nature of daylight, daytime and nighttime hours will be determined by the DB and communicated to the Genesis ECM and construction personnel. Hours will be documented in the MCR.
4. A DB or BM will be on-site at all times during nighttime construction activities. The DB/BM will participate in nighttime construction personnel tailgate briefings prior to the start of work each shift to reiterate biological resource concerns, including wildlife that are active at night.
5. The Worker Environmental Awareness Program (WEAP) and one-time delivery training programs will include information regarding DKF presence along the access road. Emphasis will be placed on compliance with speed limits and the no-tolerance policy for speeding. All personnel will be informed that any wildlife observed (live, injured, or dead) will be reported to the DB. The DB contact information will be provided during environmental trainings.
6. If a DKF or AB is found within the Project Area during operations, the DB will be contacted to assess the situation and determine what further action is warranted.

## 6.0 REPORTING

Individual reporting requirements are required for specific incidents or circumstances, as summarized in the sections above. In addition, as required by COC BIO-8 and BIO-17 for the GSEP, relevant information specified in Section 3 will be included in survey summary reports, MCRs, and Annual Compliance Reports, as summarized below:

1. The GSEP will report monthly to the CPM, CDFG, and BLM for the duration of construction on the implementation of DKF and AB avoidance and minimization measures. The information may be contained in the MCR.
2. The Project owner will submit a report to the CPM, BLM, and CDFG within 30 days of completion of DKF and AB pre-construction surveys. The report will describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures.
3. As part of the Annual Compliance Report, the DB will provide a report to the CPM, BLM, and CDFG that describes the results of implementation of DKF and AB avoidance and minimization measures.

## **Appendix A**

**Genesis Solar Energy Project (09-AFC-8C), Riverside County,  
California, Condition of Certification B10-17, Desert Kit Fox and  
American Badger, California Energy Commission, November 2011**

## CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512  
www.energy.ca.gov



November 2, 2011

Mr. Ron Johnson  
Director of Construction and Engineering  
NextEra Energy Resources, LLC  
700 Universe Blvd.  
Juno Beach, FL 33408

**Re: Genesis Solar Energy Project (09-AFC-8C), Riverside County, California  
Condition of Certification BIO-17, Desert Kit Fox and American Badger**

Dear Mr. Johnson:

The Genesis Solar Energy Project (GSEP or project) is a 250-megawatt (MW) solar electric generating facility using solar parabolic trough technology that was licensed by the California Energy Commission (Energy Commission) on October 12, 2010. The Energy Commission's license for the project contains 27 Biological Resources conditions of certification that ensure mitigation of the project's impacts to sensitive species and their habitat to less than significant levels. The purpose of this letter is to discuss the on-going monitoring of desert kit fox (*Vulpes macrotis*) dens that has taken place since February 2011 in accordance with Condition of Certification BIO-17, the status of kit fox dens within the project site's temporary desert tortoise fencing, and the course of action for active kit fox dens still remaining within the site during construction activities.

On January 3, 2011, NextEra Energy began performing pre-construction surveys for desert kit fox (February 5, 2011 Memorandum - Genesis Solar Energy Project, BIO-9 and BIO-17 - Desert Tortoise, Desert Kit Fox, and American Badger Clearance Surveys – Phase I) in accordance with BIO-17 during which 14 dens, both satellite and natal, were found within the GSEP plant site and along the access road. Since January 2011, the project's Designated Biologist and various approved Biological Monitors have monitored the status of these dens and the occurrence of other dens found in the site during the course of various site preparation activities (i.e. site mowing and clearing, unexploded ordnance surveys, etc). Methods of monitoring primarily consisted of daily den checks and remote camera photography. The Designated Biologist, Energy Commission staff, field staff from the California Department of Fish and Game (CDFG) and United States Bureau of Land Management (BLM), and various NextEra Energy personnel have remained in regular contact on the status of dens and which impact avoidance measures to implement in order to ensure compliance with BIO-17 during the various stages of site preparation activities. Conference calls between NextEra Energy, the Designated Biologists (Peggy Goette and Thomas Darden), Energy Commission staff (Amy Golden, Chris Davis, and Eric Veerkamp), and CDFG (Magdalena Rodriguez) have taken place on April 13, May 18, June 13, July 2, September 2, and October 12, 2011.

The CDFG expressed concern over passively relocating young juveniles out of their natal dens prior to the juveniles being capable of foraging and surviving on their own, which was



taken into consideration in the development of den protection measures and passive hazing techniques. Passive hazing techniques implemented since April 2011 to encourage passive relocation of kit fox outside of the project's temporary desert tortoise fencing in order to allow GSEP site preparation activities to take place included the following:

- removing the primary sources of food and cover through on-site mowing which was required as part of unexploded ordnance surveys;
- the installation of temporary ramps over tortoise fencing to encourage crossing; and
- the use of coyote urine, a primary kit fox predator, around burrow entrances and the use of a wooden lathe in the burrow entrance center to discourage use of the burrow (these two techniques were only used on non-natal, satellite dens).

Den protection measures implemented with these passive hazing techniques included the following:

- leaving a 500-foot wide vegetated buffer around each den;
- leaving a 500-foot wide vegetated corridor from each den to the desert tortoise fencing to encourage movement;
- on-going monitoring through remote camera photography stations; and
- daily visits to the dens to check their status and document kit fox sign.

After ten months of monitoring, three active dens (Dens #5, 8, and 17) remain within the GSEP's temporary desert tortoise fencing. Based on the monitoring results, ongoing collaboration for the project, and strong site fidelity that desert kit fox have shown for the site's dens, Energy Commission staff, CDFG and BLM field staff, and the Designated Biologist are in agreement that in the best interest of the kit fox population at the GSEP site and surrounding area, a more aggressive approach to passively relocating the kit fox that occupy the remaining dens be implemented.

Based on a project conference call held on October 12, 2011, and a memorandum from the project's Designated Biologist (dated October 13, 2011 – GSEP Designated Biologist Kit Fox Burrow Excavation Proposal), there is a recommendation that burrows that are determined inactive at Den #8 (which currently consists of 15 burrows, 12 of which show signs of regular use) be excavated. This work would be supervised by the Designated Biologist with at least one additional approved Biological Monitor and two additional laborers. Excavation of inactive burrows would not begin until air temperatures have cooled to daytime highs of 85 to 89 °F to reduce the potential for heat stress to relocated animals and is tentatively planned for November 2, 2011. First, burrows at Den #8 will be investigated with an underground viewing device (peeper scope) to determine unoccupancy. Once confirmed unoccupied, the

burrow would be dug down to the bottom using hand tools and then back-filled by hand to discourage re-occupancy. Burrow excavation would occur during cooler hours of the day, preferably from 0600 to 0900 hours. For Den #8, the Designated Biologist estimated that four burrows could be excavated at one time and that it would likely take three to four days to fully excavate Den #8. To further discourage re-occupancy and to optimize effectiveness of this approach, the timing of burrow excavation will be as close to site grading in the area of Den #8 as possible, preferably within 24 hours. Following den excavation, an approved Biological Monitor must be present within the vicinity of Den #8 to monitor for kit fox activity during construction and grading activities, in the event that a kit fox has re-occupied the area surrounding Den #8. This action is in the best interest of the desert kit fox population in the project area, as confirmed by the CDFG, BLM, and the Designated Biologist.

The above strategy to excavate inactive burrows of a den not vacated for three consecutive days is a violation of BIO-17 in the project's Final Decision. However, because of the threat to the desert kit fox and the circumstances set forth above, Energy Commission staff does not object to the strategy and will not file a complaint against the project owner. Depending on the results and effectiveness of this passive relocation approach, the Energy Commission staff will consult with CDFG and BLM and either suggest similar methods or modify these passive relocation methods for the two remaining kit fox dens (Dens 5 and 17) or any other kit fox den that may be identified throughout the course of site grading. In the event that BIO-17 is still relevant during the remainder of construction activities at the GSEP but would require modifications in keeping with the best interest of the kit fox population in the project area, NextEra Energy must petition the Energy Commission for a project amendment in advance of taking any action. If you have any questions on the content of this letter, please contact Chris Marxen, Compliance Office Manager, at (916) 651-0587 or [cmarxen@energy.state.ca.us](mailto:cmarxen@energy.state.ca.us).

Sincerely,



TERRENCE O'BRIEN, Deputy Director  
Siting, Transmission,  
and Environmental Protection Division

cc: Kevin W. Bell, California Energy Commission  
Jody Fraser, USFWS  
Eric Knight, California Energy Commission  
Mark Massar, BLM  
Chris Marxen, California Energy Commission  
Christopher Meyer, Bureau Veritas  
Charlyn Mosley, NextEra Energy Resources  
Magdalena Rodriguez, CDFG  
Peter Sorenson, USFWS  
Eric Veerkamp, California Energy Commission  
Rick York, California Energy Commission

## **Appendix B**

**Canine Distemper Virus: Information for Agency Personnel  
and Renewable Energy Projects, California Department  
of Fish and Game, November 2011**

## **Canine Distemper Virus: Information for Agency Personnel and Renewable Energy Projects**

Prepared by: Deana Clifford – 29 November 2011

Contact information: [dclifford@dfg.ca.gov](mailto:dclifford@dfg.ca.gov), 916-616-0809

Starting in October 2011, the California Department of Fish and Game has observed confirmed and suspect cases of Canine Distemper Virus (CDV) in at least 5 desert kit foxes near Blythe, CA. Although distemper infections have not been reported previously in this species, most of California's carnivore species are susceptible to the virus.

Canine Distemper Virus infects both domestic dogs and wild carnivores. The virus is transmitted among carnivores by contact with oral, respiratory and ocular (eye) fluids, and other body fluids (urine, feces) containing the virus. Animals with the virus may not show clinical signs, but can still shed virus for up to 90 days. Although acquired infections in domestic dogs have been reduced through preventative vaccinations, infected dogs that have contact with or share food with wild carnivores can transmit the virus to wildlife. The virus also spreads among wild carnivores mostly affecting susceptible young animals. Canine distemper virus is not transmissible to people.

CDV is easily killed by direct sunlight, heat, drying and cleaning with 10% bleach solution.

Distemper can cause respiratory, neurologic and gastrointestinal illness. Disease can progress quickly, and in wildlife, often just deaths are observed. Clinical signs include, but are not limited to: depression, fever, respiratory distress, diarrhea, anorexia, seizures, uncoordination, circling, yellow to clear discharge from the nose and eyes, and crusting on the nose, eyes, mouth or footpads. There is no treatment or cure for sick animals except supportive care.

Signs of neurologic distemper often resemble rabies, a disease of great public health importance. Therefore, even if distemper is suspected, all carnivores with neurologic disease should also be tested for rabies.

Vaccination can prevent disease, but the efficacy of vaccines developed for domestic animals is not known for most wildlife species, and should not be assumed to be 100%. Furthermore, vaccination during an outbreak may not be effective if animals receiving the vaccine are currently infected with the virus, and often repeat vaccinations are needed to ensure protection.

General strategies for CDV prevention include keeping domestic dogs up to date on all vaccinations, discouraging pet owners from feeding their dogs and cats outdoors, keeping dogs on leash when visiting wild areas and cleaning up after pets, and discouraging people from feeding wild carnivores as this increases local carnivore density and may increase interactions between wild and domestic carnivores.

## **Appendix C**

### **Interim Monitoring and Mitigation Plan to Address Canine Distemper Virus Mortalities in the Desert, California Department of Fish and Game**

## **Interim Monitoring and Mitigation Plan to Address Canine Distemper Virus Mortalities in Desert**

Prepared by: Deana Clifford, DVM, MPVM, PhD

Contact information: [dclifford@dfg.ca.gov](mailto:dclifford@dfg.ca.gov), 916-616-0809

### **Summary**

Since October 5th there have been at least 6 documented desert kit fox mortalities on or adjacent to a 2,000 acre solar energy development approximately 20 miles west of Blythe, CA just north of Interstate 10. Four of these deaths have occurred since November 10<sup>th</sup>. One of these foxes was observed alive with convulsions and extreme weakness, but died en route to a rehabilitation facility.

Five carcasses in good condition were necropsied by pathologists at the California Animal Health and Food Safety Lab (CAHFS) in Davis and San Bernardino. Canine distemper viral inclusion bodies were present in tissues from all 5 foxes. CDV infection has been confirmed by immunohistochemistry (IHC) assay on the first fox; IHC test results are pending on the 4 additional animals, but pathology signs indicate CDV is the most likely cause of death.

Given the familial nature of kit foxes, their high degree of home range overlap, and the disease transmission dynamics of canine distemper virus there is potential for additional mortalities and geographic spread of the disease. Coyotes are also present in the area and may be affected or involved in disease transmission and spread.

It is too early to know whether or not we will see additional distemper cases. Accordingly, timely case detection, diagnosis and mapping are our best tools for tracking this situation. To detect additional cases and track the spread of disease we need cooperation from numerous agencies, contracted biologists and developers.

If the number of cases increases and/or the geographic area spreads, population impacts for desert kit foxes could be significant. In such a scenario, various management options to help stop disease spread may need to be implemented as additive mortality from disease may exacerbate any population impacts from development activities in the desert.

For now the DFG nongame wildlife program recommendation is to be proactive in monitoring and, if warranted based on the data, consider potential management responses. One issue of current concern involves passive relocation of kit foxes that inhabit burrows on land slated for development. If passive relocation activities are being conducted in an area experiencing or adjacent to distemper cases, these activities may enhance disease transmission and spread through multiple mechanisms. First, animals stressed by disturbance or relocations may be more susceptible to illness and death because CDV infection decreases immune function. Second, passive relocation activities in an area experiencing CDV deaths may result in increased movement of animals shedding virus, thereby increasing disease transmission into new areas. Given this scenario, case by case evaluation of passive relocation activities in light of the most recent data about the occurrence and locations of cases is warranted.

On the next page is a brief outline and suggested interim approach for monitoring and potentially mitigating spread of disease. The approach by nature should be adaptive and re-evaluated continuously as new information becomes available. Recommendations are based on published population

demographic and home range data from kit foxes, disease ecology of CDV, and experience from other CDV outbreaks in free-ranging carnivores.

**Interim Recommendations 29 Nov 2011:**

**A. Actively monitor kit fox dens in and adjacent to the affected area and in areas determined to be at high risk for disease spread based on best available data, and rapidly report known mortalities and submit for disease testing.**

1. Begin immediate daily monitoring of all known active burrows in GSEP area and burrows adjacent (within 1 km) of GSEP site. Monitoring can be a combination of remote cameras, visual observations.
2. Report all mortalities or observations of sick/injured animals immediately to DFG veterinarian. DFG veterinarian will facilitate necropsy or animal care. Guidelines for handling sick or dead animals are attached. Note – other carnivores may be affected, so a finding of sick or dead coyotes would also be important and reportable.
  - i. Diagnostic lab: CAHFS San Bernardino (M. Massar and D. Clifford have submission forms).
  - ii. Nearest licensed wildlife rehabilitator: Living Desert Zoo, Palm Springs
3. Map locations of all known burrows onto current disease map – DFG WIL can do this if given data files.
4. Overlay data regarding kit fox home range, dispersal distances and movements onto project map to help determine areas for prioritizing fox monitoring and case detection activities.
  - i. First overlay minimum and maximum home range buffers (approximately 4 – 13 km<sup>2</sup>) around dens that have had mortalities. Add additional zones 2 and 3 home range distances away.
  - ii. Second overlay buffer of dispersal distance and daily movements to get a complimentary idea of the area where infected foxes may have moved.
  - iii. Note: this data assumes that the disease would be primarily spread via contact between infected kit foxes. It does not consider potential disease transmission by coyotes or other carnivores (domestic and wild).
5. Informal reporting on these activities twice weekly, with a minimum of once weekly written update in the absence of mortality.
  - i. Note: incubation period for CDV may be up to 2 weeks, thus over the next 30 days its critical to monitor the population for additional sick and dead animals. This period of time would roughly represent 2 incubation cycles. If additional mortalities are detected, the monitoring time period is basically reset as we can assume the virus is continuing to be transmitted in the population.

**B. Temporary cessation of passive relocation and disturbance to kit foxes within and immediately adjacent to areas where mortalities have occurred.**

1. CDV suppresses the immune function of infected animals. Additional stressors to infected animals may increase their chances of illness and death, and the duration of shedding of the virus. Furthermore, stressed animals are likely to be more susceptible to infection and subsequent illness.
2. If infected animals are disturbed to the point of den abandonment they are more likely to contact foxes in adjacent territories and transmit disease into new areas.

3. Accordingly, all efforts should be made to 1) reduce any disturbance to kit foxes currently inhabiting the area where mortalities have occurred, and 2) temporarily cease passive relocation activities until data is supportive of a cessation of new cases.
  - i. Suggestions: temporarily increase protective buffer around active kit fox dens. Minimum recommendation – double buffer from 75 ft to 150 ft?
  - ii. Only enter area for monitoring activities
  - iii. Temporarily cease passive relocation activities.
  - iv. Initial period for this action would be 2 weeks (one incubation cycle), with re-evaluation at that time.

**C. Employ precautionary measures to eliminate risk of human-induced disease spread**

1. Ensure domestic animals do not enter disease risk area and are not on site.
2. Employ simple disinfection protocol (attached) during fox monitoring activities.
3. For current dig down (Den 17 where 3 mortalities occurred) – do not move soil from Den 17 to other locations during dig down; soil should remain at that location and be exposed to sunlight to kill the virus. Although risk is low, CDV can persist in the environment if out of direct sunlight and in a cool place (like the underground burrow).

**Overall Plan:** Suggest once weekly conference call update with designated biologist and key agency representatives for coordination and data evaluation.

**Appendices:**

- A. Sick and injured animal recommendation**
- B. DRAFT disinfection recommendations**



## **Appendix A: Draft guidance for reporting and handling sick or dead foxes**

### **DEAD FOXES:**

Please handle any carcass with gloves. After recording an incident form, location of the carcass (UTM) and taking a photo, place the carcass into a plastic bag and tie or seal the bag. Place the carcass into a second plastic bag. Place the bagged carcass on ice or with ice packs into a cooler or styrofoam container and give me a call. The carcass should be submitted to the CAHFS lab in San Bernardino as soon as possible. Carcasses can be shipped via Fed Ex overnight or other overnight carrier from Blythe to the CAHFS lab. Make sure to place the double bagged carcass with ice packs into a hard sided or Styrofoam container, then into a second cardboard box. Check priority overnight AM delivery. The address is on the submission form. Include one copy of the submission form with the airbill, and place a second copy of the form with an incident report inside the box inside a separate plastic bag so the paper does not get wet from the ice packs. Depending on the location of the carcass, Mark Massar or I will give guidance on the account to be charged and provide a submission form for the lab. Please send myself, Mark and Magdalena a copy of the incident form. Be sure to disinfect any items used to handle, process, or transport the carcass. Place the cooler containing the bagged carcass in the trunk or in the back of a truck whenever possible.

### **SICK FOXES:**

If you encounter a live, but sick fox -- please call. If the fox is exhibiting neurologic signs (seizing, circling, stumbling), use extreme caution to not get bit when moving the animal. It is highly advised that only persons vaccinated for rabies handle carnivores exhibiting neurologic signs. You may be able to work with local animal control to assist. If possible - try to have the animal enter a transport kennel without directly touching the animal. Otherwise cover the fox with a towel, use thick gloves and quickly place the animal into the transport kennel. During transport, make sure to cover the kennel with a towel or blanket to reduce stress for the fox. The Living Desert Zoo has a veterinarian and staff experienced in wild animal care, a quarantine facility, and is a licensed wildlife rehabilitation facility by the Department of Fish and Game. I can facilitate arranging for care and assist with transport if needed. Be sure to disinfect all kennels or items used to handle and transport the animal, and ensure that transport kennels are adequately locked during travel.

Contact information: Dr. Deana Clifford 916-616-0809, [dclifford@dfg.ca.gov](mailto:dclifford@dfg.ca.gov)

## **Canine Distemper Virus (CDV): Prevention of Spread during Fox Monitoring Activities**

**CDV is easily inactivated using common household bleach. The important point is to let the bleach have adequate contact time with the surface you want to disinfect. Depending on disinfection activity spray bottles with 10% bleach solution or Clorox disinfectant wipes can be used.**

**Disinfectant Types:** 10% solution of Sodium Hypochlorite (Bleach)  
Clorox Bleach Disinfectant Wipes

**Contact Time:** 10 – 30 minutes

**Proper Dilution for 10% Bleach solution:** Mix 1 part household bleach with 9 parts of water (ie. 1 quart of bleach with 9 quarts of water). Use caution as this solution is corrosive and irritating in contact with eyes or skin. If solution gets into your eyes, immediately flush eyes with copious amounts of water or saline solution for contact lenses. If skin exposure, rinse with copious amounts of water. Please follow manufactures recommendations for skin or other bodily exposure.

---

**Directions for Bleach Use as a Disinfectant:** Good hygienic practices should be instituted to reduce the spread of disease between den sites. Any object that comes into contact with the ground or surrounding landscape needs to be disinfected before moving to the next site. These recommendations are simple and can be done quickly, requiring only a spray bottle with bleach solution, a small plastic bag to place used bleach wipes into, and bleach wipes.

- **Shoes:** Spray the soles of all shoes with a 10% bleach solution prior to moving to another burrow site. Ideally wait at least 10 minutes before wiping/rinsing off with water. Avoid stepping on fecal material or in wet soil that could be contaminated with urine.
- **Camera/Camera Stands:** If the camera stands are made of wood, the stands should be discarded and replaced when the camera is moved to a new burrow. If camera stands are metal or plastic then spray the stand with a 10% bleach solution; allow 10 minutes for contact time; then rinse with water. If using bleach wipes, wipe down legs completely, allow 10 minutes to pass before installing at next site.
- **Other Equipment** (digging equipment): Wipe equipment with bleach wipes or spray with 10% bleach, allowing 10 minutes to pass before rinsing with water.
- **Hands:** Use hand sanitizer or if available wash with soap and water in between burrow visits (handling cameras etc).
- Be mindful of clothing. If you have puppies at home, we suggest changing clothes in between work and home to reduce any risk of infecting your pets or vice versa, as puppies are most susceptible to CDV infection. If working in burrows or digging burrows, be mindful of soil contamination on your clothing.